IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) ~~Device~~ A device for duplicating and characterizing nucleic acids in a reaction chamber, ~~characterized in that~~ comprising:

a chamber body ~~(1)~~ containing an optically permeable chip ~~(2)~~ having a detection area with an optically permeable zone of detection ~~(12), and~~ , the detection area being adapted to immobilize at least one of nucleic acid molecules, peptides, and proteins; ~~being optically permeable at least in the zone of the detection area (12) of the chip (2), is sealingly placed on~~

an optically permeable chamber support ~~(5) , so that a sample chamber (3) having~~ on which the chamber body is sealingly placed to form a capillary gap ~~(7) is formed~~ between the chamber support ~~(5)~~ and the detection area ~~(12)~~ of the chip ~~(2), which is~~ the capillary gap being temperature-adjustable and flow-controllable, and wherein the capillary gap forms a single reaction chamber and is adapted to amplify and characterize nucleic acids therein.

2. (Currently Amended) ~~Device~~ A device according to claim 1, ~~characterized in that the~~ further comprising a temperature adjustment means ~~are~~ connected with the chamber support ~~(5)~~ and adapted to permit a rapid temperature control ~~heating and/or cooling of the sample chamber (3) having~~ the capillary gap ~~(7)~~.

3. (Currently Amended) ~~Device~~ A device according to claim 2, ~~characterized in that~~ wherein the temperature adjustment means are situated on ~~the~~ a side of the chamber support ~~(5)~~ facing towards the chamber body ~~(1)~~.

4. (Currently Amended) ~~Device~~ A device according to claim ~~1~~ 2, wherein the optically permeable zone of detection includes detection spots; and ~~characterized in that~~ wherein the temperature adjustment means ~~(16, 17)~~ are configured ~~in the form of optically transparent thin films and/or are so finely structured~~ such that the optical transparency of the chip ~~(2)~~ remains unaffected at least at ~~in the zones of~~ the detection spots ~~(13) of the detection area (12)~~.

5. (Currently Amended) ~~Device~~ A device according to claim 4, ~~characterized in that~~ wherein the temperature adjustment means comprise micro-structured heating elements ~~(17), preferably nickel-chromium thick-film resistance heaters and/or microstructured temperature sensors (16), preferably nickel-chromium thick-film resistance sensors~~.

6. (Currently Amended) ~~Device~~ A device according to claim 1, wherein the optically permeable zone of detection includes detection spots;

~~characterized in that~~ wherein the chamber support ~~(5)~~ comprises systems for thoroughly mixing ~~the~~ a liquid sample, ~~which are~~ the systems being configured ~~in the form of optically transparent thin films and/or are so finely structured that the optical transparency of~~ such that the chip ~~(2)~~ remains optically transparent ~~unaffected~~ at least at ~~in the zones of~~ the detection spots; and

~~(13) of the detection area (12), whereby preferably~~ a quadrupole system , adapted to induce ~~for inducing~~ an electro-osmotic flow, is ~~concerned~~ associated with the chamber support.

7. (Currently Amended) A device ~~Device~~ according to claim 6, ~~characterized in that~~ wherein the quadrupole system ~~is realized as~~ includes gold-titanium electrodes.

8. (Currently Amended) A device ~~Device~~ according to claim 1, ~~characterized in that~~ wherein the chamber support ~~(5)~~ and the chamber body ~~(1) preferably~~ consist of at least one of glass, ~~and/or~~ synthetic material, and ~~/or~~ optically permeable synthetic materials ~~particularly preferred of nylon, Teflon, topaz, polycarbonate, polystyrene, PMMA and/or polymethane ethyl acrylate~~.

9. (Currently Amended) A device ~~Device~~ according to claim 1, ~~characterized in that~~ wherein the chamber support ~~(5)~~ consists of a thermally conducting material.

10. (Currently Amended) A device ~~Device~~ according to claim 1, ~~characterized in that~~ wherein the chip consists of optically permeable materials including at least one of ~~, preferably of~~ glass, borofloat glass, quartz glass, monocrystalline CaF_2, sapphire, PMMA and~~/or~~ silicon.

11. (Currently Amended) A device ~~Device~~ according to claim 1, ~~characterized in that~~ wherein the chamber body ~~(1)~~ comprises~~, at least in the zone of the chip (2)~~ an optically permeable conical recess in the detection area of the chip.

12. (Currently Amended) A device ~~Device~~ according to claim 1, ~~characterized in that~~ wherein the chamber body ~~disposes of~~ includes an inlet ~~(81)~~ and an outlet ~~(82)~~ spatially separate from each other, for charging ~~the sample chamber (3) and~~ the capillary gap ~~(7)~~.

13. (Currently Amended) A device ~~Device~~ according to claim 12, ~~characterized in that~~ wherein the inlet ~~(81)~~ and the outlet ~~(82)~~ are arranged unilaterally to the chip ~~(2)~~ and are separated by a gas reservoir nose ~~(9)~~.

14. (Currently Amended) A device ~~Device~~ according to claim 1, ~~characterized in that~~ wherein the chamber body ~~(1)~~ is sealingly and unreleasably connected with the chamber support ~~(5)~~ by at least one of an adhesive and~~/or~~ weld connection~~, or is releasably connected through an additional sealing surface (43)~~.

15. (Currently Amended) A device ~~Device~~ according to claim 1, ~~characterized in that~~ wherein the detection area ~~(12)~~ is configured in the form of spots, onto which probes ~~(56, 57, 58, 59)~~ in the form of nucleic acid molecules are immobilized~~, said nucleic acid molecules preferably being DNA molecules and/or RNA molecules~~.

16. (Currently Amended) A device ~~Device~~ according to claim 15,

~~characterized in that~~ wherein the probes ~~(56, 57, 58, 59)~~ are immobilized through spacers ~~(55)~~.

17. (Currently Amended) A device ~~Device~~ according to claim 1, ~~characterized in that~~ wherein the detection area ~~(12)~~ is configured in the form of spots, onto which probes ~~(56, 57, 58, 59)~~ in the form of at least one of peptides and~~/or~~ proteins are immobilized~~, preferably antibodies, receptor molecules, hormones and/or pharmaceutically active peptides being concerned~~.

18. (Currently Amended) A device ~~Device~~ according to claim 1, ~~characterized in that~~ wherein the capillary gap is adapted to allow ~~the evaluation of the chip-based~~ characterization ~~may ensue~~ by ~~forms of the~~ at least one of optical detection and~~/or~~ spectroscopy~~, particularly preferred by transmitted-light fluorescence measurement, dark field fluorescence measurement, confocal fluorescence measurement, reflected-light fluorescence measurement, photometry and/or differential photometry~~.

19. (Currently Amended) A device ~~Device~~ according to claim 1, ~~characterized in that the evaluation of~~ wherein the chip is adapted to allow ~~-based~~ characterization ~~ensues~~ by a silver precipitation reaction.

20. - 24. (Canceled)

25. (New) A device for duplicating and characterizing nucleic acids, comprising:

a chamber support;

a chamber body on the support; and

a capillary gap intermediate the chamber support and the chamber body, the capillary gap being adapted to act as a single chamber for both the reaction and characterization of nucleic acids.

26. (New) The device of claim 25, wherein the chamber body includes an optically permeable chip.

27. (New) The device of claim 26, wherein the optically permeable chip includes a detection area that includes immobilized probes.

28. (New) The device of claim 27, wherein the immobilized probes include at least one of nucleic acid molecules, peptides and proteins.

29. (New) The device of claim 27, wherein the detection area is optically permeable.

30. (New) The device of claim 25, wherein the capillary gap is temperature-adjustable and flow-controllable.

31. (New) The device according to claim 5, wherein the micro-structured heating elements include nickel-chromium thick film resistance heaters.

32. (New) The device according to claim 4, wherein the temperature adjustment means include microstructured temperature sensors.

33. (New) The device according to claim 32, wherein the microstructured temperature sensors include nickel-chromium thick film resistance sensors.

34. (New) A device according to claim 1, wherein at least one of the chamber support and the chamber body include an optically permeable synthetic materials selected from the group consisting of nylon, Teflon, topaz, polycarbonate, polystyrene, PMMA and polymethane ethyl acrylate.

35. (New) A device according to claim 1, wherein the chamber body further includes an additional sealing surface adapted to releasably connect to the chamber support.

36. (New) A device according to claim 15, wherein the nucleic acid molecules include at least one of DNA molecules and RNA molecules.

37. (New) A device according to claim 36, wherein the probes are immobilized through spacers.

38. (New) A device according to claim 17, wherein the at least one of peptides and proteins include at least one of antibodies, receptor molecules, hormones and pharmaceutically active peptides.

39. (New) A device according to claim 18, wherein the at least one of optical detection and spectroscopy includes at least one of transmitted-light fluorescence measurement, dark field fluorescence measurement, confocal fluorescence measurement, reflected-light fluorescence measurement, photometry and differential photometry.

40. (New) The device of claim 1, wherein the capillary gap is adapted to provide almost simultaneous performance of a chip-based characterization and at least one reprocessing reactions and conditioning reactions.

41. (New) The device of claim 40, wherein the capillary gap is adapted to amplify nucleic acids by PCR.

42. (New) The device of claim 40, wherein the capillary gap is adapted to perform a reverse transcription of RNA to cDNA.

43. (New) The device of claim 40, wherein the capillary gap is adapted to perform a digestive process of nucleic acids by means of restriction enzymes.